WHAT IS CLAIMED IS:

1.   A circuit for use with a pulse width modulated integrated circuit having a soft-start reset function comprising:

a diode having a first terminal connected to a soft-start reset terminal of the integrated circuit;

5   a voltage divider coupled between a voltage reference and a common terminal for the integrated circuit, the diode having a second terminal coupled to a tap of the voltage divider; and

a soft-start capacitor coupled between the second terminal of the diode and the common terminal; whereby upon power startup of the integrated circuit, the soft-

10   start capacitor is charged by the tap of the voltage divider and wherein in the event of a single event upset condition, when the soft-start reset terminal of the integrated circuit is reduced to a level at or near the level of the common terminal of the integrated circuit, the diode prevents the soft-start capacitor from discharging through the integrated circuit.

2.   The circuit of claim 1 further comprising an external fault detection and shutdown triggered circuit coupled across said soft-start capacitor for discharging the capacitor.

3.   The circuit of claim 2 wherein the external fault detection and shutdown circuit comprises a switch coupled across said soft-start capacitor.

4.   The circuit of claim 3, wherein the switch is disposed in series with a resistor across the soft-start capacitor.

5.   The circuit of claim 4, wherein the switch comprises a transistor having a control terminal coupled to an external fault detection and shutdown signal.

6.   The circuit of claim 1, wherein the PWM IC has a semiconductor switch coupled between the common terminal and the soft-start reset terminal.

7.   The circuit of claim 6, wherein the switch in the PWM integrated circuit comprises a thyrisistor.

8.   The circuit of claim 1, wherein the voltage divider comprises a resistor divider circuit.

9.   The circuit of claim 1, wherein the diode is polarized such that the first terminal is the anode and the second terminal is the cathode.